TRANSPORTATION ASSET MANAGEMENT

Message Islands

For more information, call the Office of Asset Management at 202-366-0392 or visit these Web sites: http://www.fhwa.dot.gov/infrastructure/asstmgmt and http://assetmanagement.transportation.org.

Transportation Asset Management is a strategic approach to maximize the benefits from resources used to operate, expand, and preserve the transportation infrastructure.

Transportation Asset Management brings informed decision making to resource allocation and utilization decisions.

- **Strategic investment analysis:** Integrated decision making focusing on the transportation system over its life cycle.
- **System performance orientation:** Recognizing the direct relationship between investment and system performance.
- **Customer focus:** User impacts and customer satisfaction are fully considered, and information supports the accountability reporting needs.

The time for Transportation Asset Management is now. We are in the midst of historic change.

- **Huge expenditures and increased accountability:** Taxpayers want the maximum return on investment. Almost $130 billion was spent on highways alone in 2000.
- **Challenges with greater complexity:** Big tradeoffs between preserving what we have and adding new capacity.
- **New partnerships with the private sector:** Innovations in maintaining, operating, and improving roadway assets (e.g., design-build, warranties, and outsourcing).
- **Capability now available:** Today, computing power, data, and analytical tools are sufficient.
- **Effective private sector model:** Maximizes profits through Asset Management.

CEOs of State DOTs will benefit from Asset Management.

- **Improved program funding and delivery:** Demonstrates impacts of different funding scenarios.
- **Comprehensive decisions:** Landscape view of the agency, the system, and the users it serves.
- **Enhanced communication and accountability:** Readily available information for transportation agency, legislators, and customers.
- **Basis for consensus building:** Provides information for balancing competing objectives.

Many State DOTs are closer to implementing Asset Management than they know.

- **Using sound management systems and quality data:** Provides necessary inputs to tradeoff analysis.
- **Conducting performance-based management and strategic planning:** A first step toward decision making that is based on Asset Management.

Help is available.

- **Tools:** Management systems, such as for pavements and bridges; tradeoff analysis software, such as the Highway Economic Requirements System–State Version; and data collection and integration techniques.
- **Information:** FHWA publications, Community-of-Practice Web site at http://assetmanagement.transportation.org, and National Asset Management Conferences (next scheduled for Atlanta on September 29–30 and for Seattle on October 21–22, 2003).
- **Training:** *Guide to Asset Management* with self-assessment, and a companion course.

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Overview

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What Is Transportation Asset Management?

Transportation Asset Management (TAM) is a strategic approach to maximize the benefits from resources used to operate, expand, and preserve the transportation infrastructure.

TAM is not a software, database, or black box system but a process to economically justify the allocation and utilization of resources.

What's New About Asset Management?

- More strategic way of thinking
  - Policy based (goals and objectives drive investment decisions)
  - Comprehensive, integrated (cuts across asset classes, functions, and modes)
  - Considers long-term consequences, not just immediate impacts, of investments
- Different way of doing business
  - Performance driven (outcomes are more important than activities)
  - Focused on customer satisfaction (user impacts are important)
  - Fact-based comparisons of investment alternatives (less history and fewer rules-of-thumb)
  - Oriented to return-on-investment
- New analytical tools and ways of applying old tools to support decision making
  - More economic analysis
  - Better data integration and utilization
  - Improved use of information management systems

How Does Transportation Asset Management Work?

Generic Process:

- Inventory the assets and determine their current condition and performance
- Predict the condition and performance of the assets over time
- Identify investment alternatives to meet current and future objectives
- Compare investment alternatives, accounting for agency and user life-cycle costs and benefits, to find the optimal mix of projects satisfying an agency's performance goals given policy and budget constraints
- Determine how to most effectively deliver the program
- Monitor the results and make necessary refinements to the decision-making process

What's in It for Transportation Agencies?

- Provides investment scenarios that can be used to justify increased funding for transportation programs
- Demonstrates what different investment levels would produce in terms of improved performance
- Maximizes benefits by determining when and where investments should be made
- Conveys impacts of funding to elected officials and the public

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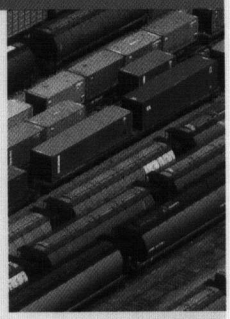
Agency and Public Benefits



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Leads to improved customer satisfaction

Transportation Asset Management (TAM) suggests the best use of each unit of available resources, targeting investments so that they will generate the highest return possible. TAM provides for productively managed transportation systems where investments are linked to customer expectations. Overall, life-cycle costs will decline, and safety, system reliability, user convenience and comfort, and condition will improve.

Builds credibility and accountability

Transportation professionals are expected to be good stewards of the resources entrusted to them by the tax-paying public. They are held accountable for expenditures and are called upon to defend their actions. TAM not only contributes to better decisions, but also helps to demonstrate the "what," "why," "how," and actual outcomes of agency decisions and actions.

Supports consensus building among a broad spectrum of stakeholders

A large and growing number of stakeholders are interested in the transportation system. Their issues are exceedingly complex and cut across a broad spectrum: mobility, safety, preservation, air quality, congestion, economic development, and quality of life. TAM provides a platform, built on common information, from which desired outcomes addressing the issues may be defined and the potential strategies for realizing them may be evaluated.

Facilitates public policy decisions

TAM has great potential to translate public policy goals into actions, quantify funding requirements, and project performance outcomes. This feature is particularly useful when tight budgets force State legislatures to assess the merits of alternative programs such as education, health, and transportation. Transportation officials can use TAM findings to demonstrate the impact of alternative funding commitments on transportation system users and the community in general.

Allows agencies to plan for the future

TAM allows an agency to envision where it wants its transportation system to be in the future and to develop a roadmap to chart its course for getting there. Along the way, transportation agencies applying TAM will have the information and analytical systems in place to easily design and evaluate ad hoc ideas.

Provides a methodology to better understand the transportation system decision-making process

The TAM decision-making framework includes performance goals, inventory condition and service levels, recommended improvements, and estimates of the marginal gains from alternative projects. This information is particularly useful when work is outsourced and more individuals are involved in managing the system.

Improved communication with customers

TAM provides the information and documentation necessary to articulate a picture of an agency's transportation system program. Based on this picture, an agency can persuasively make the case not only for funding programs, but also for implementing specific activities. For example, TAM makes it easier to convince the public that a preventive maintenance program makes sense even in the absence of visible signs of deterioration.

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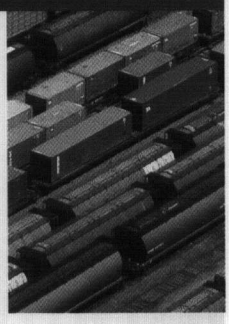
Guiding Principles



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Rules, policies, performance measures, and budgets establish constraints, not actions.

Rules, policies, performance goals, and budgets are externally determined and define the limits within which investment options are evaluated; they do not directly inform the Transportation Asset Management (TAM) investment recommendation process. However, it is anticipated that over time the TAM procedure may influence many agencies to re-evaluate their rules, policies, performance goals, and budgets.

Asset performance is linked to funding.

A key premise underpinning TAM is that system performance (e.g., condition and service levels) is linked to investment. Because this relationship can be quantified, alternative investment strategies may be compared through tradeoff analysis, and those resulting in the optimum investment may be identified.

Better decisions arise from fact-based information.

While TAM helps an agency arrive at better decisions by providing quality, fact-based information, final decisions still reflect the experience, judgment, values, and professional expertise of executives, managers, and legislators. TAM does not replace the decision maker.

Engineering tells part of the story; economics completes the picture.

TAM recognizes that infrastructure assets have not just a physical, or engineering, dimension, but also a user, or economic, aspect. The focus is on how the system is performing and how users are impacted.

A landscape view of an agency and its responsibilities is critical to decision making.

An integrated decision-making process is the hallmark of TAM. Resource investment and utilization decisions reflect a comprehensive view of the transportation system, where assets, functions, and modes are considered collectively rather than component by component. The performance of the system will be different when investments are considered in the total context of the system, as opposed to element by element.

Tomorrow is as important as today.

TAM addresses the system over time. Investment decisions are based on benefits and costs over the life cycle of a project, rather than just on immediate impacts. Past activities and expenditures can form data sets to guide future data collection and decision making. A long-term perspective also pushes thinking beyond initial implementation costs toward future operation, preservation, and maintenance activities. Preventive maintenance, then, becomes an important consideration and long-term commitment when alternative investment options are evaluated and compared.

The focus is on outcomes, not inputs.

TAM is motivated by what will be accomplished in terms of system performance and customer satisfaction, as opposed to how much is spent or how many activities are completed. TAM puts the focus on the "end" (e.g., safe, efficient, and socially responsible movement of people and goods), not the "means" (e.g., construction, operations, and preservation). Inputs and activities remain important, and agencies will continue to manage them. However, successful managers will be identified based on the results, or outcomes, of their actions.